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# Data Management

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# Overview

**Data Management Subsystem provides the access to data and services for:**

- **Descriptions of ESDTs and their attributes, domains of the attributes, and the available operations on the ESDTs.**
- **Searches and other service requests that cross data server boundaries. Both distributed across sites and local to sites.**
- **Provides gateway functionality to translate protocols from V1 to V0 and the reverse.**

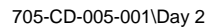
## **ECS Context**

- **Interfaces to Data Servers to integrate results and provide cross-site services.**
- **Provides facilities for Level III interoperability to ADCs, such as NOAA.**

## **Scenario Context**

- **Coincident Search Scenario - Pull side.**

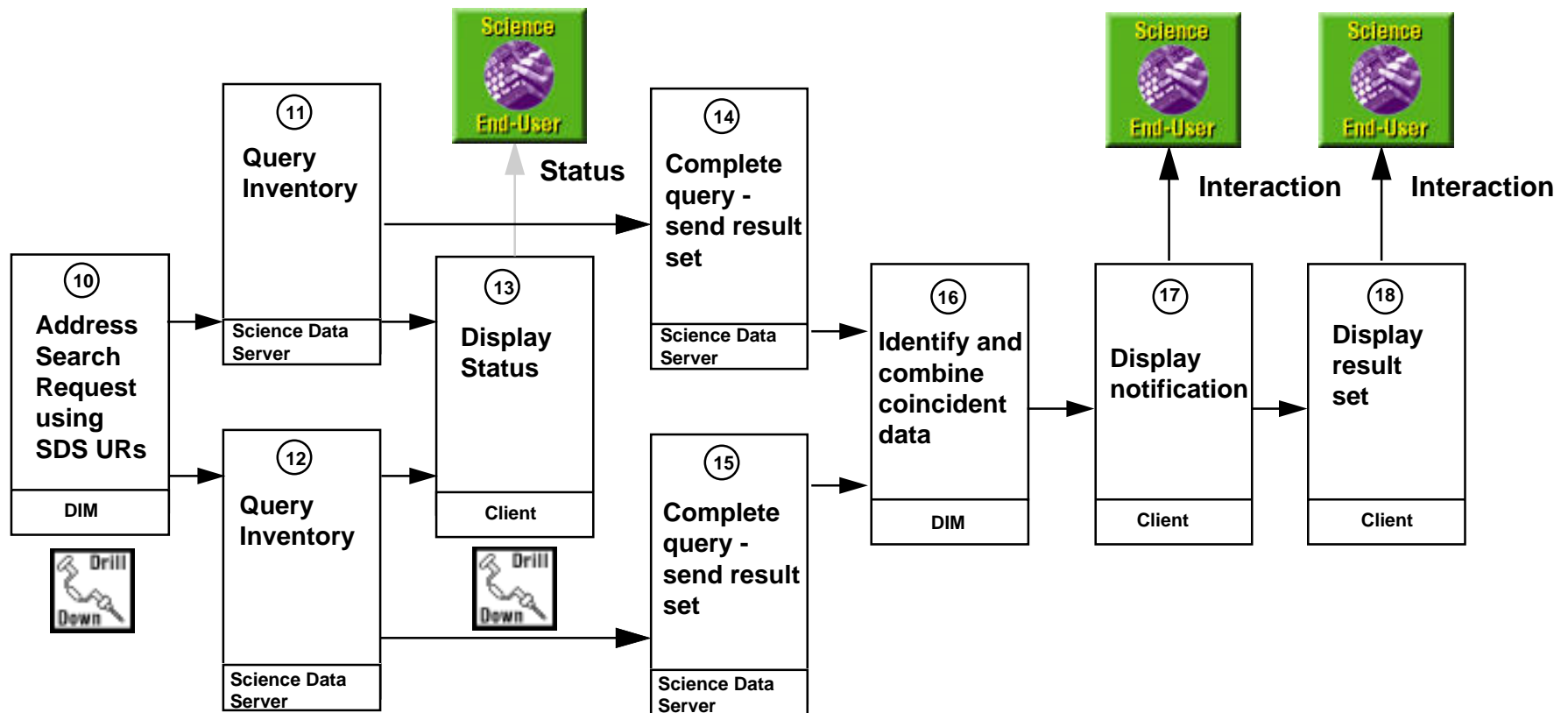


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# Coincident Search

## Functional Flow







# Design Drivers

## Driving Requirements

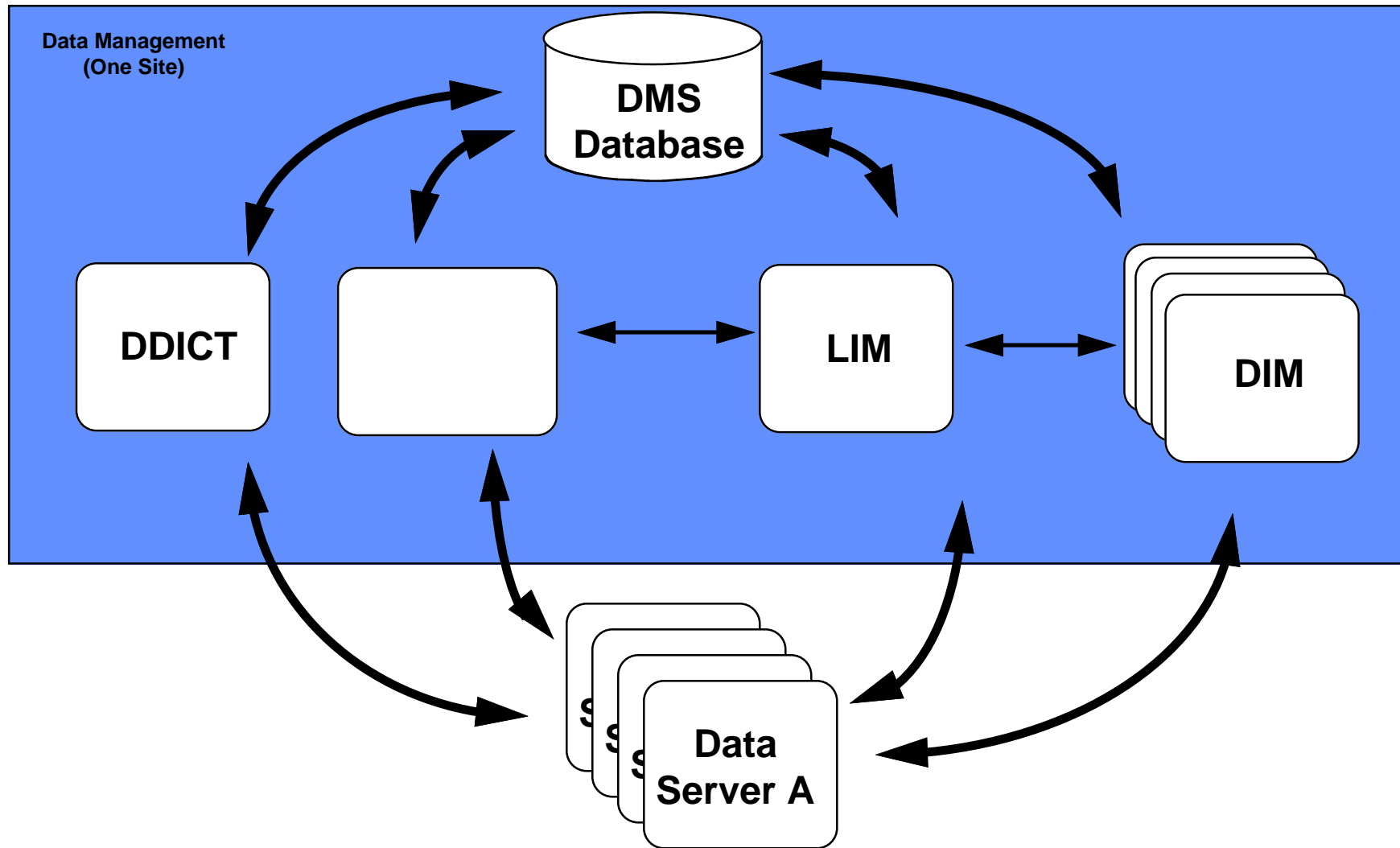
- Federated “conceptual” schema to facilitate searches on interrelated data, while allowing for site autonomy.
- Ability to easily integrate and maintain the independent components. (i.e. new collections or data providers)
- Provide framework for future Level III interoperability with external data providers.

## New Features in Release B

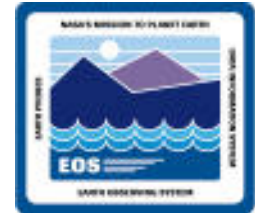
- Data Dictionary Service - Provides the descriptions.
- Distributed Information Manager (DIM) - multiple site requests.
- Local Information Manager (LIM) - single site, but multiple data server requests.
- V1 to V0 interoperability - V0 Gateway modified to provide V1 to V0 requests.



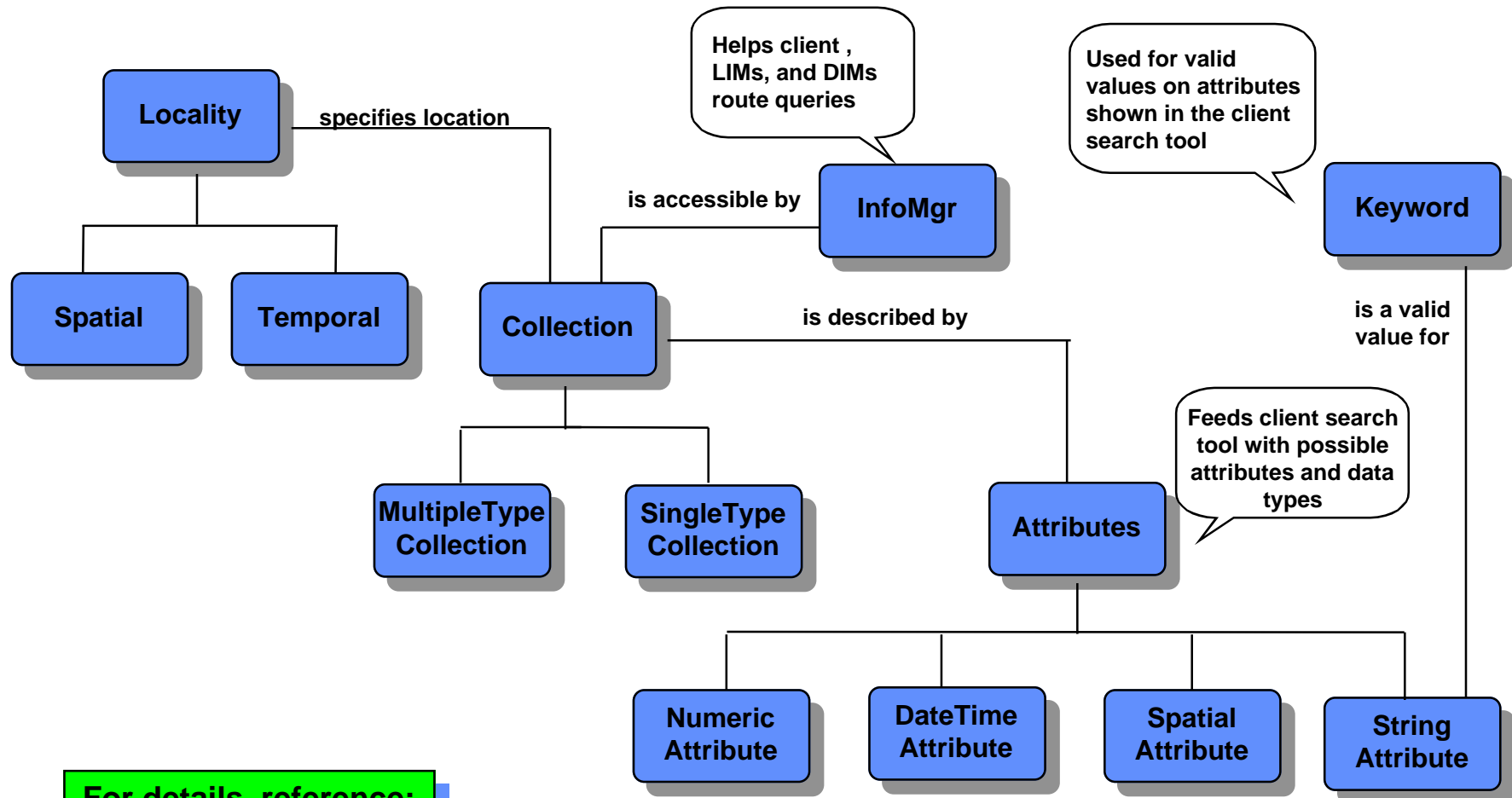
# Data Management Architecture







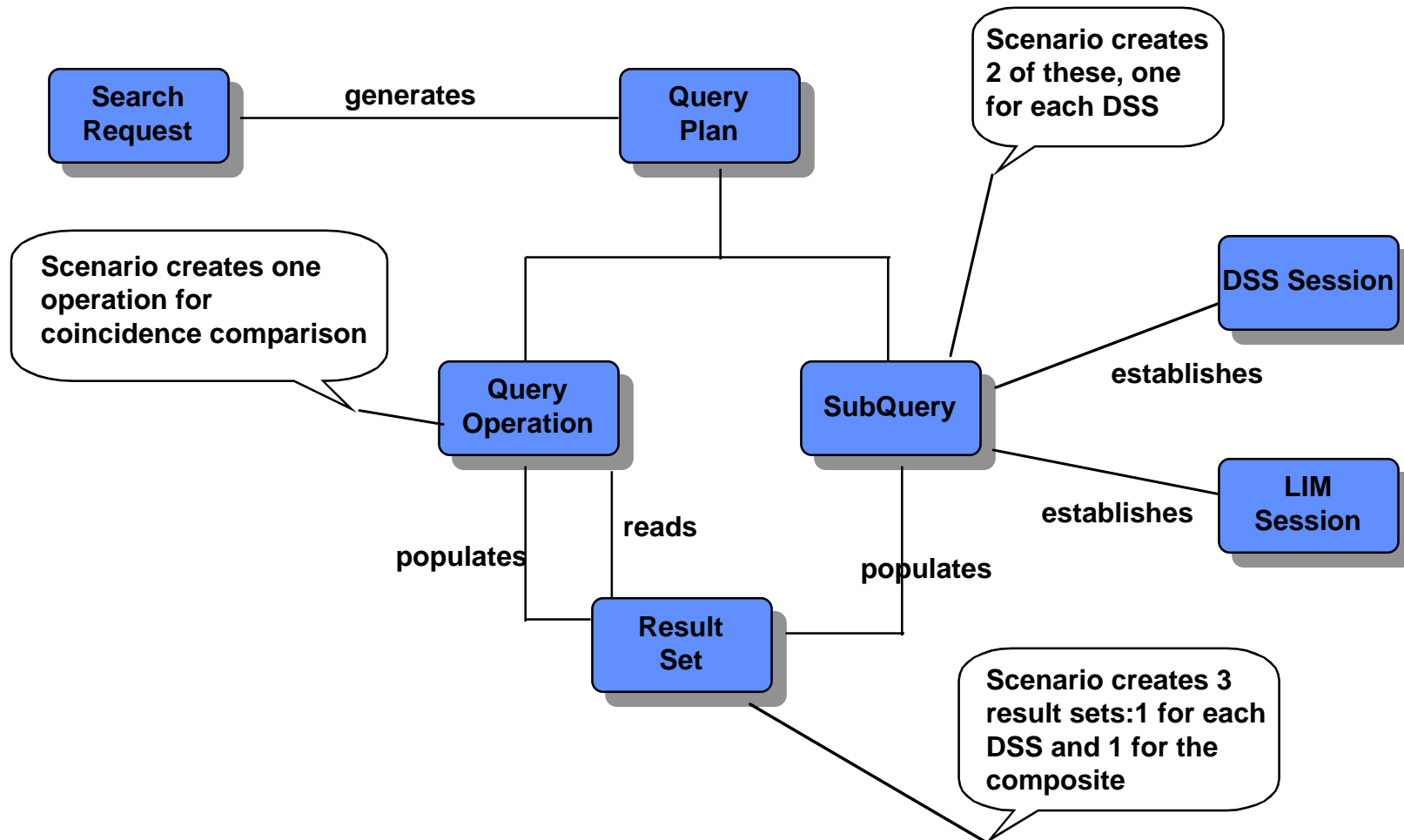
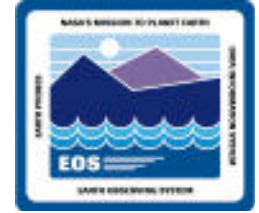
# High Level Data Dictionary Model



For details, reference:  
305-CD-023-001



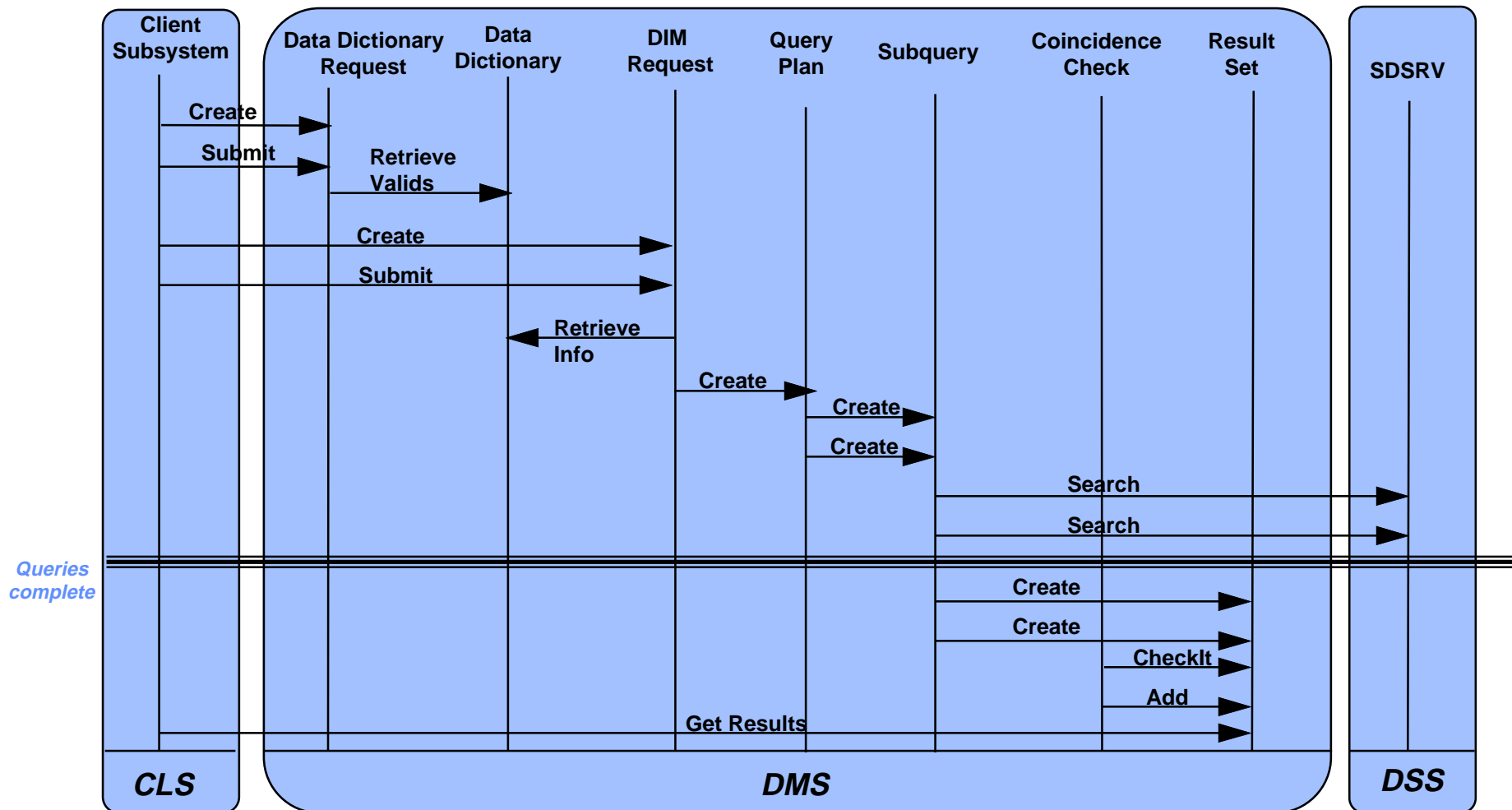
# High Level DIM Search Request Model







# Coincident Search Event Trace







# Current Status

## COTS Selections

- Sybase DBMS and Replication Server

## Prototypes/Incremental Development Releases

- PW2 (January 1996): LIM prototype for multi-server queries
- EP7 (April 1996): LIM augmented to do coincident queries
- Mid-1996: DIM for multi-server and coincident queries

## Next Steps

- Perform coincident search trade study and prototype
- Address Earth Science Query Language impacts
- COTS opportunities evaluation
- Benchmarking of LIM and DIM activities on data dictionary database
- Establish thresholds for replicated data dictionary database





# Summary

**Provides client applications with single, integrated view of services and data distributed across the system.**

**Utilizes a conceptual schema representation that allows:**

- **Additional attributes outside standard ECS attributes**
- **Domain value definition for smart routing of queries**

**Provides users with definition of all keywords and attributes**

**Provides access to data sources independent of their underlying architecture (given a protocol that the ECS system can interface with).**

**Provides framework for external data providers to become part of ECS provider network.**